

10/050,472

G0241

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A system for feeding forward reticle fabrication data, comprising:  
one or more fabricating components adapted to perform one or more reticle fabrication processes;  
a control system operatively connected to at least one of the one or more fabricating components, the control system adapted to control, at least in part, the operation of at least one of the one or more fabricating components and to map a reticle into a grid pattern consisting of a plurality of grid blocks;  
one or more measurement components operatively connected to the control system, the one or more measurement components adapted to measure, *via* scatterometry, one or more reticle fabrication parameters from one or more reticle fabrication processes at one or more grid blocks;  
and  
a signature data store operatively connected to the control system, the signature data store adapted to store one or more scatterometry signatures, each signature containing data for one or more grid blocks.
2. (Original) The system of claim 1 where the control system is further adapted to analyze one or more reticle fabrication parameters from a reticle fabrication process and to selectively feed forward control data to one or more of the fabricating components.
3. (Original) The system of claim 2 where at least one fabricating component is further adapted to initialize a reticle fabrication process performed by the fabricating component based, at least in part, on the control data forwarded by the control system.

10/050,472

G0241

4. (Original) The system of claim 3 where the one or more fabricating components comprise at least one of a photoresist coater, a photoresist developer, an etcher, a resist stripper, a mask exposure tool beam including any one of an e-beam pattern, laser pattern generator or a mask repeater, a post exposure bake plate, a polisher and a quality control processor.

5. (Original) The system of claim 4 where the control system comprises:  
a microprocessor programmed to analyze the one or more fabrication parameters; and  
a memory, operatively connected to the microprocessor, the memory adapted to store one or more program instructions associated with analyzing the one or more fabrication parameters.

6. (Original) The system of claim 5 where the one or more measurement components comprise a scatterometry system adapted to generate one or more scatterometry signatures.

7. (Previously presented) The system of claim 6 where the fabrication parameters comprise at least one of:

the planarity of a photoresist layer, the depth of a photoresist layer, the chemical composition of a photoresist layer, the width of one or more photoresist features, the slope angles of one or more features in the photoresist layer;

the planarity of a substantially opaque reticle layer, the chemical composition of a substantially opaque reticle layer, the depth of a substantially opaque reticle layer, the location of one or more features in the substantially opaque reticle layer, the depth of one or more features in the substantially opaque reticle layer, the width of one or more features in the substantially opaque reticle layer, the slope angles of the walls of one or more features in the substantially opaque reticle layer;

the planarity of a substantially transparent reticle layer, the chemical composition of a substantially transparent reticle layer, the depth of a substantially transparent reticle layer, the location of one or more features in the substantially transparent reticle layer, the depth of one or more features in the substantially transparent reticle layer, the width of one or more features in the substantially transparent reticle layer, the slope angles of the walls of one or more features in the substantially transparent reticle layer and the location of one or more defects in the substantially transparent reticle layer.

10/050,472

G0241

8-13. (Cancelled)

14. (Withdrawn) A method for feeding forward reticle fabrication control information, the method comprising:

for one or more reticle fabrication processes:

performing the reticle fabrication process;

gathering reticle fabrication data concerning the reticle fabrication performed during the reticle fabrication process, where the reticle fabrication data is gathered *via* scatterometry;

determining whether there is a subsequent reticle fabrication process and/or apparatus that can benefit from receiving feed forward control information based on the reticle fabrication data; and

if there is a subsequent reticle fabrication process and/or apparatus that can benefit from receiving feed forward control information based on the reticle fabrication data, selectively generating feed forward control information based, at least in part, on the reticle fabrication data, and selectively forwarding the feed forward control information to the one or more subsequent reticle fabrication processes and/or apparatus.

15. (Withdrawn) The method of claim 14 where the reticle fabrication process is at least one of a photoresist application process, a photoresist developing process, an etching process, a resist stripping process, a spin track process, a stepper process, a post exposure baking process, a polishing process and a quality control process.

16. (Withdrawn) The method of claim 15 where the reticle fabrication data concerns at least one of:

the planarity of a photoresist layer, the depth of a photoresist layer, the chemical composition of a photoresist layer, the width of one or more photoresist features, the slope angles of one or more features in the photoresist layer;

the planarity of a substantially opaque reticle layer, the chemical composition of a substantially opaque reticle layer, the depth of a substantially opaque reticle layer, the location of

10/050,472

G0241

one or more features in the substantially opaque reticle layer, the depth of one or more features in the substantially opaque reticle layer, the width of one or more features in the substantially opaque reticle layer, the slope angles of the walls of one or more features in the substantially opaque reticle layer;

the planarity of a substantially transparent reticle layer, the chemical composition of a substantially transparent reticle layer, the depth of a substantially transparent reticle layer, the location of one or more features in the substantially transparent reticle layer, the depth of one or more features in the substantially transparent reticle layer, the width of one or more features in the substantially transparent reticle layer, the slope angles of the walls of one or more features in the substantially transparent reticle layer and the location of one or more defects in the substantially transparent reticle layer.

17. (Withdrawn) The method of claim 16 where the reticle fabrication data gathered *via* scatterometry comprises one or more scatterometry signatures that can be compared to one or more stored scatterometry signatures to facilitate generating the feed forward control information.

18. (Withdrawn) The method of claim 17 where the one or more scatterometry signatures are compared to the one or more stored scatterometry signatures by pattern matching.

19. (Cancelled)

20. (Currently Amended) A system for feeding forward reticle fabrication data, comprising:  
means for employing one or more fabricating components adapted to perform at least one or more reticle fabrication processes;

means for employing a control system connected to at least one of the one or more fabricating components, the control system adapted to control, at least in part, the operation of at least one of the one or more fabricating components and to map a reticle into a grid pattern consisting of a plurality of grid blocks;

means for employing one or more measurement components operatively connected to the control system, the one or more measurement components adapted to measure, *via* scatterometry,

10/050,472

G0241

one or more reticle fabrication parameters from one or more reticle fabrication processes at one or more grid blocks; and

means for employing a signature data store connected to the control system, the signature data store adapted to store one or more scatterometry signatures, each signature containing data for one or more grid blocks; and[[.]]

means for constructing a signature data store from at least one of observing intensity/phase signatures and modeling and simulation intensity/phase results.

21. (Previously Presented) The system of claim 5, the microprocessor is connected to at least one of the one or more measurement systems.

22. (Previously Presented) The system of claim 6, the scatterometry signatures are constructed from at least one of observed intensity/phase signatures, modeling, and simulation.

23. (Withdrawn) The method of claim 17, the scatterometry signatures are constructed from at least one of observed intensity/phase signatures, modeling and simulation.